



Development of a Scale to Assess the Appropriateness of Curricula Materials for Diverse Populations

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ABSTRACT

As America's public school population becomes more diverse, selecting culturally appropriate instructional materials becomes increasingly important. Though several existing scales assess the quality of curricula materials, most do not consider cultural relevance. The Curricula Appropriateness Scale (CAS) was designed to determine the appropriateness of curriculum materials for diverse populations. The final CAS contains six statements with a 4-point, Likert-type scale response option ranging from 1=strongly disagree to 4=strongly agree for each item. Item selection was based on a review of the professional literature and existing instruments. A local panel of experts (n=10) examined a draft version of the scale for content validity. Based on the panelists' comments, the scale was revised and piloted with 27 undergraduates enrolled in an elementary school health course. A national panel of experts (n=5) then examined the scale for content validity. Feedback from the national panel was used to revise the CAS for a second pilot test. Students enrolled in a second elementary school health course completed the second CAS during the assessment of the federally developed curriculum, Learning to Live Drug Free. Item consistency reliability was measured using Cronbach's alpha. Psychometric characteristics and recommendations for using the CAS are presented.

According to Census 2000 data, America is becoming more racially diverse (U.S. Census, 2001). Among the 274.6 million people identifying themselves as belonging to only one race, nearly 1 in 4 (24.9%) were non-White. The U.S. population includes 28.4 million (or about 1 in 10) foreign-born residents (U.S. Census, 2000). Moreover, about 13% of the total population were Hispanic or Latino. Additionally, 6.8 million people reported belonging to more than one race (U.S. Census, 2001).

Enrollment in U.S. public schools reflects the country's growing diversity. As a result, schools are increasingly challenged to understand and deliver an educational experience that meets the cultural needs of a diverse study body. Thus, the issue of cultural competence becomes more important for schools (Banks, 1995). People who are culturally competent have a broad outlook of the world (Powell, 1997). This ability, which holds the potential to alter negative

and stereotypical thinking, can reduce intolerance, increase respect, and promote cooperation among individuals from diverse backgrounds. By exposing students to unfamiliar cultures, teachers lead students to discover a world rich with ideas, traditions, morals, beliefs, and values that expand both the students' and educators' understanding of the human condition (Sanchez, 1996).

Culturally appropriate curricula help to maintain academic integrity so diverse components of society can learn to understand and respect each other (Lawrence, 1997). Transforming curricula for an ethnically diverse society requires thoughtful deliberation on all aspects of school practice, including how schools influence student perceptions and responses within and outside of school. Banks (1995) described content integration as a necessary component in culturally appropriate education. This process includes teachers using examples and

content from a variety of cultures and shared attributes of subgroups within the broad racial categories to illustrate key concepts, principles, generalizations, and theories in their subject areas. A culturally appropriate curriculum includes segments of the population that compose our "national identity" (Lawrence, 1997).

Because of the growing diversity in public schools, educators must ensure that curricula appeal to a diverse student population and determine whether curricula are

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being effectively implemented. Local school boards generally decide what curricula best meet the needs of students. Individuals responsible for assessing curricula should consider many different cultural heritages. One vital component of implementing a curriculum includes instructional materials that provide diverse but accurate perspectives (Sanchez, 1996). Textbooks provide most of the content in the teaching/learning process (Sewall, 1987). Textbook bias appears in several contexts including stereotyping, omissions, distortions, and biased language. Educators must evaluate these resources in terms of content, language, and illustrations (Sanchez, 1996).

One barrier to providing culturally appropriate education is the lack of culturally competent educators who know how to develop or select culturally appropriate curricula and instructional materials. Though several curricula assessment tools exist, none appear to assess the cultural appropriateness for diverse populations (Hollins, 1996). This project developed a tool, the Curriculum Appropriateness Scale (CAS), to assess curricula for cultural appropriateness (Figure 1). CAS may help improve the process of selecting curricula that is consistent with basic skills and cultural competence. CAS also can be used to assess K-12 curricula to determine if the material is culturally appropriate. Moreover, CAS can be added to the *Instrument for Curriculum Evaluation* (ICE) (Benson, Doidge, & Riley, 1988), which served as a framework for the present scale. Though ICE was developed to assess various aspects of curricula materials, it does not contain a section on cultural appropriateness. By adding CAS to ICE, people responsible for modifying or selecting curricula can be reasonably sure that ethnic cultures are accurately represented.

INSTRUMENT DEVELOPMENT PROCESS

Instrumentation

Though it can be used as a stand-alone tool, CAS was designed to serve as an addendum to ICE, which was developed by

Benson, Doidge, and Riley (1988). ICE was designed originally to assess the quality of curricula and instructional materials using 59 criteria distributed across 14 focus areas (McDermott & Sarvela, 1999). Yet ICE does not include a section on cultural appropriateness.

The selection of the seven items was based on a review of the literature concerning cultural competence (Airihinenbuwa & Pineiro, 1988; Association for the Advancement of Health Education, 1994; Banks, 1995; Office of Substance Abuse Prevention, 1992; Powell, 1997; Sanchez, 1996), previous scales published in cultural competence evaluation text (Acosta-Deprez & Monroe, 1996; Powell, 1997; Reeves, 1997), two pilot tests, and two expert panel reviews. After writing each of the original 58 items on individual index cards, the items were sorted for redundancy. Redundant cards were eliminated, as were unclear cards and those that did not pertain to the assessment of cultural appropriateness. Twelve potential items were chosen from the original pool of 58 items. In terms of scale specification, there is a 4-point agreement scale with response options from 1=strongly disagree to 4=strongly agree.

Content Validity and Expert Panel Review

During spring 1999 a 12-item preliminary draft of the instrument was evaluated for content validity by a local panel of experts comprised of 10 faculty members at a large "Research I" university. Panel members had expertise in research, evaluation, and health education. The panel suggested improvements in phraseology and recommended reducing the scale from 12 to 10 items. A preliminary pilot study of the revised instrument was conducted with 27 students enrolled in an elementary school health course. The instrument was revised again based on results from the preliminary pilot study. Then the final revision of the instrument was submitted to a national panel of experts.

In spring 2000, 15 nationally recognized individuals were invited to review the scale before the final pilot test. These individuals

were identified based on their expertise in health education, multicultural education, research, and curriculum. Of 15 experts invited, 9 agreed to participate. The 9 experts each were mailed an assessment packet containing a cover letter, the scale, instructions, and the assessment form to be completed. The assessment form evaluated four areas: focus, brevity, clarity, and readability. Based on these criteria, experts assessed the purpose, directions, response options, and each question individually. The overall scale was assessed for content validity as well. Experts also were encouraged to write comments directly on the scale itself. Five of nine experts returned the completed assessment form and scale to be included in the revision process. Recommendations from the national panel were used to revise the CAS for a final pilot test. Revisions included reducing the scale from 10 to 7 items with wording modifications.

Pilot Tests

The preliminary pilot test was conducted in spring 1999. Students at a large Research I university enrolled in an elementary school health program course during the 1999 spring semester were invited to participate. Students were offered two extra-credit points from their instructor for participating. Researchers explained the purpose and procedures of the study to the class of 105 students. Students were asked to evaluate a brief tobacco curriculum using the initial 10-statement CAS. Researchers offered three different meeting times on different days to the students at the university library. The researchers proctored each session. Twenty-seven students participated in the preliminary pilot test.

The final pilot test was conducted in summer 2000. Students enrolled in the summer semester of an elementary school health program course participated in the final pilot test. For the final pilot test the instructor agreed to include pilot test activities as a class assignment for all students. The assignment was included in the course syllabus.

The final pilot test included evaluating a curriculum using ICE and CAS. The



Figure 1. Curricula Appropriateness Scale

Purpose: This tool can be used to help determine whether health education curricula and program resources are culturally appropriate given an intended audience.

Directions: Please circle the number that matches your response to each statement using the scale below as your guide.

1=SD=Strongly Disagree 2=D=Disagree 3=A=Agree 4=SA=Strongly Agree

	SD	D	A	SA	NA
1. Ethnic minorities are positively represented in a variety of roles	1	2	3	4	NA
2. Inensitive language and vocabulary toward ethnic minorities are used	1	2	3	4	NA
3. Negative stereotypes are assigned to ethnic minorities	1	2	3	4	NA
4. Materials include participation of various ethnic groups	1	2	3	4	NA
5. Materials contain negative ethnic bias	1	2	3	4	NA
6. Materials promote respect for ethnic differences	1	2	3	4	NA

Reverse score items 2, 3, and 5. Add all responses.

Scores 18 and above suggest materials lean toward being culturally appropriate.

Learning to Live Drug Free curriculum, developed by the U.S. Department of Education (1992), was the curriculum selected for review. *Learning to Live Drug Free* was selected for the final pilot study because the researchers needed sufficient copies of an inexpensive, well-designed, self-contained curriculum. Also, because the curriculum was developed and distributed under the auspices of the U.S. Department of Education, the researchers made the inference that for the purpose of this preliminary investigation the curriculum was of acceptable quality in terms of content accuracy, authority, objectivity, and coverage. Students were asked to review the curriculum using both ICE and CAS at different times. On the first day of the final pilot test the researcher introduced the first part of the assignment for assessing the *Learning to Live Drug Free* curriculum using ICE. Students were given 2 days to complete the assignment. Students were encouraged to consider the curriculum's value and whether they would recommend the curriculum to others or use it themselves in their own classrooms. Each student received a copy of the

Learning to Live Drug Free curriculum and ICE. Students were told they could keep the curriculum after the assignment was completed. Students were encouraged to highlight, underline, and make notes on the curriculum. Also, they were asked to bring the curriculum, with the completed ICE, to the next class for an in-class activity, the second part of the final pilot test.

Two days after the initial assignment, the second part of the final pilot test was conducted. First, students were given 10 minutes to review the *Learning to Live Drug Free* curriculum within the context of the findings from their assessment using the ICE scale. This step was designed to prepare students for the assessment using CAS. Next the researchers collected the completed ICE assessments. Then students were informed they would be completing another scale to assess the curriculum for cultural appropriateness. CAS was distributed and completed during class time. Of the 81 students enrolled in the class, 71 participated in both assessment activities.

Readability

The SMOG reading formula was used to

assess readability. This formula was chosen for its simplicity and because it requires 100% comprehension of the material read, thus producing conservative estimates (Windsor, Baranowski, Clark, & Cutter, 1984). The SMOG procedure produced a readability estimate of 12.0 on the final scale, indicating an approximate reading level of grade 12. This level of reading is appropriate, considering the intended audience has an education level above grade 12.

PSYCHOMETRIC CHARACTERISTICS

Descriptive Statistics

The descriptive data, based on a maximum score of 28, revealed a mean score of 19.98 ($SD=2.39$). With a minimum score of 16 and a maximum score of 25, the range was 9. Among the seven scale items, vocabulary (Q2) and stereotypes (Q3) scored the highest ($M=3.24$, $SD=.44$ and $M=3.24$, $SD=.49$, respectively) and roles (Q1) scored the lowest ($M=2.49$, $SD=.60$).

Scale Reliability

Internal consistency reliability for the scale was assessed by calculating coefficient

**Table 1. Scale Psychometrics: Score Direction, Means, Standard Deviations, Item-to-Total Correlations, and Coefficient Alpha Reliability Estimates**

Item		SD ^B	M	SD	ITC ^C	AWID ^A
1. Ethnic minorities are positively represented in a variety of roles	P	2.49	.597	.697	.668	
2. Inensitive language and vocabulary toward ethnic minorities are used	N	3.24	.435	.471	.728	
3. Negative stereotypes are assigned to ethnic minorities	N	3.24	.489	.556	.709	
4. Materials include participation of various ethnic groups	P	2.63	.536	.445	.731	
5. Materials contain negative ethnic bias	N	3.14	.527	.425	.735	
6. Materials promote respect for ethnic differences	P	2.15	.597	.498	.719	
7. Contributions and skills of people from various ethnic backgrounds are presented	P	2.71	.559	.249	.773	

Note: Standardized sample, $N=41$.

^AAWID=alpha with item deleted.

^BSD=score direction.

^CITC=item-to-total correlation.

alpha (Cronbach, 1951). This approach measures item consistency reliability; the extent to which all items relate to one another (McDermott & Sarvela, 1999). The reliability estimate for the scale was .76, which is within acceptable range for applied research (Nunnally, 1978). Interrater reliability was assessed by transposing the variables and computing coefficient alpha. The interrater reliability estimated for the scale was .96, revealing an overall high degree of consistency among raters on the items comprising the scale.

Item Analysis

Table 1 shows score direction (negative or positive), means, standard deviations, individual item-to-total correlations, and alpha coefficients with item deleted. Item means ranged from 2.15 to 3.24, item standard deviations ranged from .435 to .597, and item-to-total correlations ranged from .249 to .697. Alpha coefficients with items deleted from the scale ranged from .71 to .77. Interitem correlations for individual items were between -0.11 and .77 as measured by Pearson's product moment

correlation coefficient. Item 7 was negatively correlated with three items: 2, 3, and 5. The remaining 18 correlations were positive. Deleting Item 7 did not increase coefficient alpha for the scale, although it did eliminate all negative interitem correlation coefficients.

DISCUSSION

CAS was designed to assess the cultural appropriateness of curricula, educational modules, and instructional materials such as videos. Because of its low item-to-total correlation and the fact that it negatively correlated with three items, Item 7 (Table 1) should be deleted. Additional pilot studies that include practitioners experienced in curricula evaluation might reveal possible areas for improvement. In any case, a revised scale is presented in Figure 1.

Data from the pilot study indicated that CAS is reliable from the internal-consistency perspective. Moreover, based on the careful examination of two expert panels, it may be concluded that CAS is content valid for assessing the cultural appropriateness of health education curricula. However, several limitations of this study should be noted. First, the participants in this study were not experts in curriculum, substance abuse prevention education, or multicultural education. Second, because the final pilot study was conducted in a classroom environment, "student-raters" may have responded in a socially desirable manner, creating a potential response bias. Third, the pilot test was conducted with only one curriculum. Thus, subsequent studies using expert panels and multiple curricula would increase the generalized application of the scale. Fourth, because a rating scale reflects the judgments of human recorders whose perceptions are subject to influences, the scale itself may reveal inconsistencies or errors (Tuckman, 1999). Although rating scales offer an efficient recording technique, the results they produce are subject to human error.

CAS appears to have at least four applications. First, the scale can be used to assess the cultural appropriateness of curricula, educational modules, and instructional



materials designed for priority or general populations being considered for adoption. On this 24-point scale, a score of 18 or above suggests materials lean toward being culturally appropriate. A score of 18 is equivalent to a mean score of 3.0 (i.e., agree or strongly agree). CAS can be used alone, or it can be added to the *Instrument for Curriculum Education*. (Benson et al., 1988). Second, CAS can help identify deficiencies in curricula, educational modules, and instructional materials currently being used in school and nonschool programs. Third, CAS can be used as a guide for designing culturally appropriate materials. Fourth, the scale can be used as a resource for teaching elementary majors and health education majors how to assess and develop culturally appropriate materials.

For educators and education majors, health teachers and health educators, the use of a curriculum assessment tool that includes a section on cultural diversity will lead to a more positive learning environment for students of all backgrounds. It will provide a means for educators to determine whether a curriculum is culturally appropriate for their students. Future assessments focusing on ethnic diversity will foster appreciation for diversity both in and out of the classroom.

Cultural competence specialists emphasize that to have integrity in education, the learning experience must begin with the proposition that all humans have contributed to world development and the flow of knowledge and information, and that most human accomplishments are the result of mutually interactive, international efforts. "Without multicultural education, students remain essentially ignorant of the contributions of a major portion of the world's people" (Asante, 1991, p. 172).

Some of the goals that are found frequently in a diversified curriculum

include helping students recognize and understand the values and experiences of one's own ethnic/cultural heritage; promoting sensitivity to diverse ethnicities/cultures through exposure to other cultural perspectives; developing an awareness and respect for the similarities and differences among diverse groups; and identifying, challenging, and dispelling ethnic/cultural stereotyping, prejudice, and discrimination in behavior, textbooks, and other instructional materials (Sanchez, 1996). Through continued development and evaluation of curricula materials for diverse populations, educators can strive toward achieving these goals necessary for an increasingly diversified society.

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